

OESTROUS CYCLE STAGE DEPENDENT EFFECTS OF MALE AND FEMALE BLOOD PLASMA AND VAGINAL FLUID ON DOG SEMEN MOTILITY PARAMETERS

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Adjunction of serum of different species has stimulating or inhibiting actions on semen motility. In canine species, until now no such reports were published. The aim of the present study was to analyze semen motility variations after the addition of female plasma and vaginal secretions both collected at different estrus stages, and male plasma. Ejaculated sperm collected from five beagle dogs were pooled and incubated in Tris–Glucose extender (TG) supplemented with female plasma, uterine fluid and vaginal secretions (9/1, v/v) collected at different stages of the estrus cycle and using as control media, male plasma, steroid free female plasma and Tris–Glucose without any supplementation. The motility parameters were measured objectively using Hamilton Thorn computer aided semen analyzer at T0 h, T1.5 h, T7 h, T12 h and T14 h after incubation in water bath at 38 °C. Sperm samples supplemented with female plasma showed after an initial inhibition a secondary stimulation of different motility parameters (velocities and percentages of motile, rapid and progressive spermatozoa) independently of the estrus cycle stage from which the plasma was collected. The adjunction of uterine fluid showed the same evolution but without initial inhibition. When hyper-activated spermatozoa parameter is considered, the values increased linearly from proestrus to reach the highest values at estrus (at the optimum period for fertilization). These effects were not observed in steroid free female plasma, vaginal secretions, male plasma and Tris–Glucose extender. These results suggest that female steroid hormones, uterine fluid and probably other factors are tightly involved in semen motility activation and that this effect is cycle stage dependent.

Keywords: Semen; Dog; Motility stimulation; Plasma